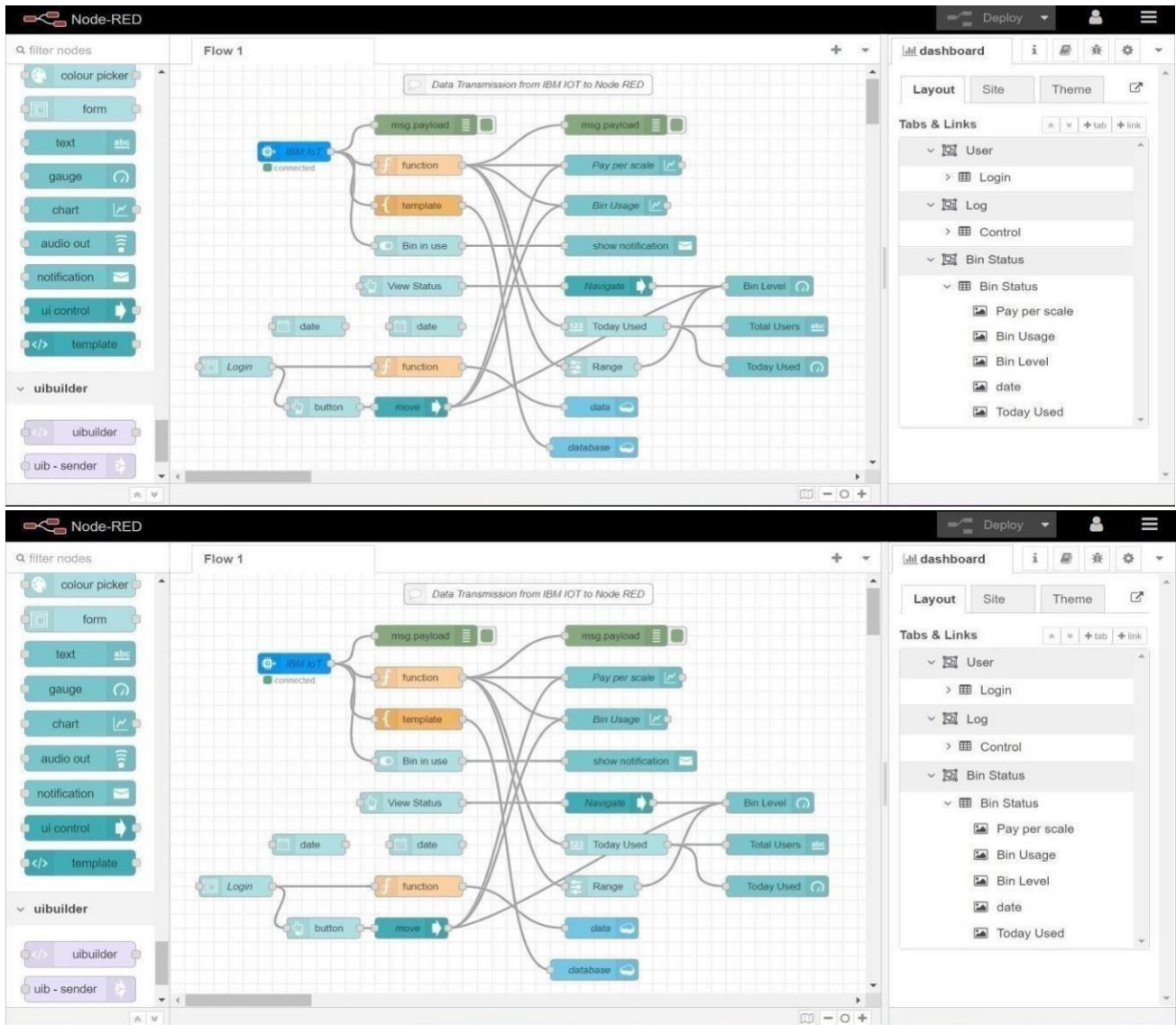


Node Red Connection to IBM Cloudant

Date	17 November 2022
Team ID	PNT2022TMID16091
Project Name	Smart Waste Management for Metropolitan Cities

1. Node-RED Connection setup for data transmission from IBM Watson IOT platform to Node-RED dashboard



2. Simulate Wokwi connection to transmit data from wokwi account to IBM Watson IOT platform and then to Node Red dashboard.

The screenshot displays the Wokwi IDE interface. On the left, the 'esp32-blink.ino' file contains an Arduino sketch. The sketch logic is as follows:

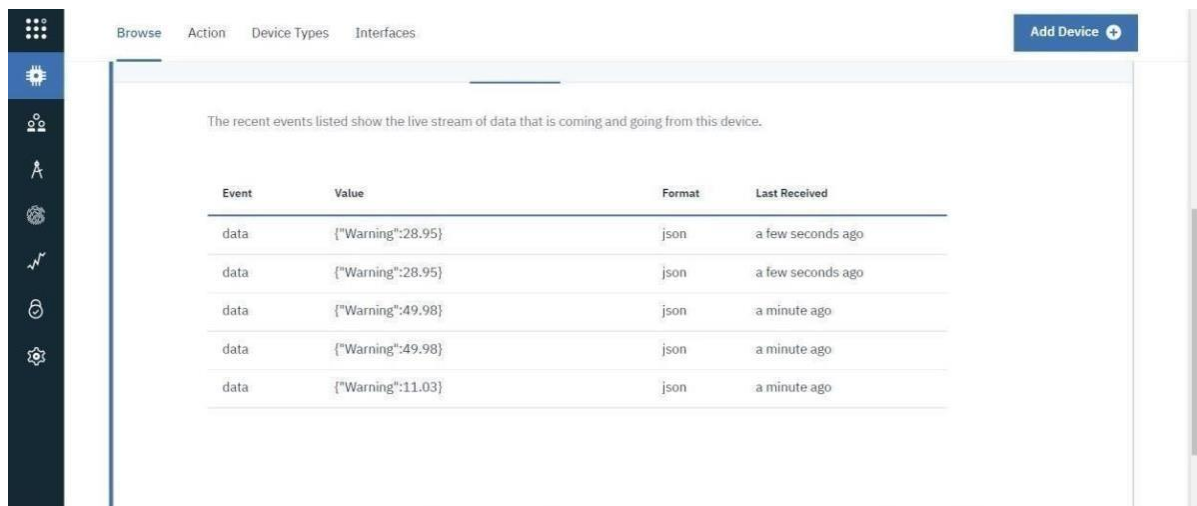
```
177 /
178
179
180
181
182 if(cm <= 25)
183 {
184   digitalWrite(21,HIGH);
185   String payload = "{\"High_Alert\":\"";
186   payload += cm;
187   payload += " }";
188   Serial.print("\n");
189   Serial.print("Sending payload: ");
190   Serial.println(payload);
191
192   if (client.publish(publishTopic, (char*) payload.c_str())) // if
193   {
194     Serial.println("Publish OK");
195   }
196 }
197 if(cm <= 50)
198 {
199   digitalWrite(22,HIGH);
200   String payload = "{\"Warning\":\"";
201   payload += cm ;
202   payload += " }";
203   Serial.print("\n");
```

On the right, the 'Simulation' window shows a breadboard circuit with an ESP32, a PIR Motion Sensor, a buzzer, and an LCD display. A 'PIR Motion Sensor' control panel is visible with a 'Simulate motion' button. The serial output log on the right shows the following sequence of events:

```
Sending distance: 26.94
Publish OK
Motion Detected
Lid Opened
High Alert!!!,Trash bin is about to be full
Lid Closed
```

3. Data transfer to Watson IOT platform.

4. Data transfer from IBM Watson IOT platform and wokwi to Node red.



The screenshot shows the IBM Watson IoT Platform interface. On the left is a dark sidebar with icons for home, devices, data, and settings. The top navigation bar includes 'Browse', 'Action', 'Device Types', and 'Interfaces'. A blue 'Add Device +' button is on the right. The main content area displays a message: 'The recent events listed show the live stream of data that is coming and going from this device.' Below this is a table with four columns: 'Event', 'Value', 'Format', and 'Last Received'.

Event	Value	Format	Last Received
data	{"Warning":28.95}	json	a few seconds ago
data	{"Warning":28.95}	json	a few seconds ago
data	{"Warning":49.98}	json	a minute ago
data	{"Warning":49.98}	json	a minute ago
data	{"Warning":11.03}	json	a minute ago

